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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,056	12/27/2001	Ming-Yau Chern	JCLA8425	3244

7590

09/03/2003

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EXAMINER

PRITCHETT, JOSHUA L

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,056

Applicant(s)

CHERN ET AL

Examiner

Joshua L Pritchett

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

This action is in response to the Request for Continued Examination and Amendment A filed July 25, 2003. Claims 1-4 and 7 have been amended as requested by the applicant.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Snow (US 5,805,326).

Regarding claim 1, Snow discloses a non-linear optical material comprising a metallic bismuth film (col. 3 line 61 – col. 4 line 2) capable of producing non-linear refraction and non-linear absorption (col. 3 lines 33-34).

Regarding claim 10, Snow discloses the non-linear optical material used as a non-linear optical device in an optical method or in an optical apparatus (col. 3 lines 25-26).

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snow in view of Yang (US 6,358,392).

Snow teaches the invention as claimed but lacks reference to laser deposition. Snow lacks reference to the use of laser deposition. Yang teaches the use of laser depositing metals including bismuth in an optical apparatus (col. 4 lines 7-14). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the bismuth film of Snow created by laser deposition as taught by Yang for the purpose of rapid and precise creation of the bismuth film.

Claims 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimock (US 5,844,225) in view of Snow.

Regarding claim 3, Kimock teaches a metallic bismuth film with a thickness between 5 and 1000 Angstroms which encompasses 10.5 nm (105 Angstroms), but lacks reference to the metallic bismuth film having non-linear optical properties. Snow teaches a metallic bismuth film (col. 3 line 61 – col. 4 line 2) capable of producing non-linear refraction and non-linear absorption (col. 3 lines 33-34). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Kimock bismuth film have non-linear optical

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properties as taught by Snow for the purpose of changing the properties of the bismuth layer based on light intensity.

Regarding claims 4-6, Kimock teaches the use of a metallic bismuth layer (4; col. 10 lines 6-12) covered by a top protective layer (Fig. 2; 3). Kimock further teaches the top protective layer being transparent (col. 9 line 66 – col. 10 line 6). Kimock further teaches the top protective layer being aluminum oxide (col. 9 lines 66-67). Kimock lacks reference to the metallic bismuth having non-linear optical properties. Snow teaches a metallic bismuth film (col. 3 line 61 – col. 4 line 2) capable of producing non-linear refraction and non-linear absorption (col. 3 lines 33-34). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the Kimock bismuth film have non-linear optical properties as taught by Snow for the purpose of changing the properties of the bismuth layer based on light intensity.

Regarding claims 7-9, Kimock teaches the use of a metallic bismuth layer (4; col. 10 lines 6-12) disposed on a base layer (1; Fig. 2). Kimock further teaches the base layer is comprised of glass (col. 5 lines 2-4). Kimock further teaches the base layer is comprised of quartz (col. 5 lines 2-4). Kimock states that the base may be formed of a single crystal or a polycrystalline material. Quartz is a well known and commonly used crystal material for a base in an optical apparatus. Kimock lacks reference to the metallic bismuth having non-linear optical properties. Snow teaches a metallic bismuth film (col. 3 line 61 – col. 4 line 2) capable of producing non-linear refraction and non-linear absorption (col. 3 lines 33-34). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have

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the Kimock bismuth film have non-linear optical properties as taught by Snow for the purpose of changing the properties of the bismuth layer based on light intensity.

Response to Arguments

Applicant's arguments, see Amendment A, filed July 25, 2003, with respect to the rejection(s) of claim(s) 1-10 under Bohaty have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Snow.

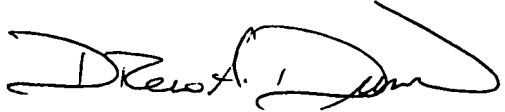
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L Pritchett whose telephone number is 703-305-7917. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JLP


DREW A. DUNN
PRIMARY EXAMINER